

AMENDMENTS
In the Claims

Current Status of Claims

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1 100.(currently amended) A flexible laminate comprising a monofilm-formed or
2 multifilm-formed flexible ply A, and another a monofilm-formed or multifilm-formed flexible ply
3 B, both comprising orientable thermoplastic polymer materials, in which the ply A has a fluted
4 configuration and the ply B on a first side is adhesively bonded in bonding zones to crests on a first
5 side of the ply A,

6 where:

7 (a) the ply B also has a fluted configuration, a flute direction of the ply B forms an angle
8 from about 30° up to and including 90° to a flute direction of the ply A and the
9 bonding zones being on crests of the first side of the ply B to produce spot bonds
10 with the crests on the first side of the ply A,

11 (b) the adhesive bonding is

12 (i) directly between the ply A to the ply B and established through a lamination
13 layer on the ply A and/or the ply B;

14 (ii) established through a separate thin bonding film; or

15 (iii) through a fibrous web adapted for bonding, and

16 (c) wavelengths of the flutes in the ply A and/or the ply B are no longer than 5 mm, and
17 the wavelengths of the flutes in both the ply A and the ply B are less than 10 mm, and

18 (d) the ply A is molecularly oriented in a direction parallel or substantially parallel to its
19 flute direction as determined by shrinkage tests the bonding forms channels by the
20 flutes in the ply A and the ply B, at least some of the channels filled with a filling
21 material, where the material is a preservative for goods intended to become packed
22 in or protected by the laminate, and where the preservative is selected from the group
23 consisting of an oxygen scavenger, ethylene scavenger, and a biocide.

1 101.(**previously presented**) The laminate according to claim 100, wherein either a thickness of
2 each of the plies is substantially the same in the bonding zones and non-bonding zones, or at least
3 one of the plies exhibits first zones extending parallel to the flute direction, each bonding zone being
4 substantially located within a the first attenuated zones whereby each first attenuated zone is
5 understood as delimited by the positions where the thickness is an average between a minimum
6 thickness of this ply within the first attenuated zones and a ply's maximum thickness within adjacent
7 non-bonding zones.

1 102.(**previously presented**) The laminate according to claim 100, wherein the flute wavelength
2 in each of the two plies is no more than 4 mm.

1 103.(**previously presented**) The laminate according to claim 100, wherein each of the two plies
2 a curved length of a flute is on average at least 5% longer than the linear wavelength, the curved
3 length being understood as the length of a curve through a cross section of a full flute wave including
4 the bonding zone which curve lies in the middle between the two surfaces of the ply.

104.(**canceled**)

1 105.(**previously presented**) The laminate according to claim 103, wherein a width of each bonding
2 zone in at least one of the two plies is no less than 15% of the flute wavelength.

1 106.(**previously presented**) The laminate according to claim 100, wherein the flutes in at least one
2 of the two plies are evenly formed and extend in a substantially rectilinear shape.

1 107.(previously presented) The laminate according to claim 100, wherein the flutes in at least one
2 of the two plies, while extending substantially along one direction, are curved, or zig-zagged and/or
3 branched.

1 108.(previously presented) The laminate according to claim 100, wherein the flutes in at least one
2 of the two plies, while extending substantially along one direction, are differently shaped in a pattern
3 which gives a visual effect showing a name, text, logo or similar visual effect.

1 109.(previously presented) The laminate according to claim 100, wherein at least one of the two
2 plies has a metallic or iridescent gloss, or the two plies have different colors.

1 110.(previously presented) The laminate according to claim 100, wherein the flute direction of
2 the ply A is substantially perpendicular to the flute direction of the ply B.

1 111.(previously presented) The laminate according to claim 110, wherein one of the two flute
2 directions essentially coincide with a machine direction of lamination.

1 112.(previously presented) The laminate according to claim 101, wherein the ply A, outside its
2 first attenuated zones, if such zones are present, is molecularly oriented in a direction parallel to its
3 flute direction or in a direction substantially parallel to its flute direction as determined by shrinkage
4 tests.

1 113.(previously presented) The laminate according to claim 112, wherein the ply B is molecularly
2 oriented and a ply B's orientation outside its first attenuated zones, if such zones are present, is
3 higher than a ply A's average orientation in the same direction outside its first attenuated zones, if
4 such zones are present, the two orientations being observable by shrinkage tests.

1 114.(previously presented) The laminate according to claim 112, wherein a yield tension in the
2 ply A in a direction parallel to its flute direction and/or a yield tension in the ply B in a direction

3 parallel to its flute direction, both referring to the cross- section of the respective ply and determined
4 in non-bonded narrow strips at an extension velocity of 500%min⁻¹, is no less than 30 MPa.

1 115.(**previously presented**) The laminate according to claim 100, wherein the ply B has a lower
2 coefficient of elasticity than the ply A, both as measured in the direction perpendicular to the flute
3 direction of the ply A.

1 116.(**previously presented**) The laminate according to claim 112, wherein the choice of material
2 for the ply B and of depth of the ply A's fluting is such that by stretching of the laminate
3 perpendicular to the direction of the ply A's fluting up to the point where the ply A's waving has
4 disappeared, the ply B still has not undergone any significant plastic deformation.

1 117.(**previously presented**) The laminate according to claim 112, wherein the ply B, outside its
2 first attenuated zones if such zones are present, has a main direction of molecular orientation parallel
3 to the direction of the flutes or in a direction close to the latter as provable by shrinkage tests.

1 118.(**previously presented**) The laminate according to claim 112, wherein the ply A is composed
2 of several films, and the said main direction of molecular orientation, is the resultant of different
3 monoaxial or biaxial orientations in the said films optionally mutually differently directed.

1 119.(**previously presented**) The laminate according to claim 117, wherein the ply B is composed
2 of several films, and the said main direction of orientation is the resultant of different monoaxial or
3 biaxial orientations in the said films optionally mutually differently directed.

1 120.(**currently amended**) The laminate according to claim 101, wherein the first attenuated
2 zones are present in at least one of the two plies and if the first attenuated zones extend in their
3 transverse direction beyond corresponding bonding zones into adjacent non-bonding zones, the
4 extensions within each non-bonding zone are limited to a total width which leaves more than half
5 of a width of the non-bonding zone as not belonging to any first attenuated zone, these widths
6 being the distances measured along the curved surfaces.

1 121.(previously presented) The laminate according to claim 101, wherein the first attenuated
2 zones are present in at least one of the plies and in which the bonding zones are substantially
3 coincident with the first attenuated zones.

1 122.(previously presented) The laminate according to claim 101, wherein the first attenuated
2 zones are present at least in one of the two plies and characterized by second solid-state-attenuated
3 zones between each pair of adjacent first attenuated zones, the second attenuated zones being
4 narrower than the first attenuated zones and located on non-bonded crests of the respective ply.

1 123.(previously presented) The laminate according to claim 101, wherein at least one of the two
2 plies exhibits solid-state-attenuated zones wherein the first attenuated zones of the ply are attenuated
3 so that the minimum thickness in such zone is less than 75% of the maximum thickness of the ply
4 in the non-bonded zones.

1 124.(previously presented) The laminate according to claim 100, wherein the ply A and the ply
2 B comprise a material which is orientable at room temperature.

1 125.(previously presented) The laminate according to claim 100, wherein the spot bonds between
2 the plies A and B is effected through a lower melting surface layer co-extruded on at least one of the
3 plies, formed in a coextrusion process.

1 126.(previously presented) The laminate according to claim 100, wherein at least one of the plies
2 comprises a barrier film designed for protection against oxygen or other gaseous materials.

1 127.(previously presented) The laminate according to claim 100, wherein at least some of the
2 flutes in one or both plies are flattened at intervals and bonded across each ones entire width at the
3 flattened locations to make two arrays of flutes to form closed pockets.

1 128.(previously presented) The laminate according to claim 127, wherein the flattened portions

2 of a number of mutually adjacent flutes or of all flutes are in an array.

1 129.(previously presented) The laminate according to claim 100, wherein by the choice of
2 polymer material or by an incorporated filler or by orientation, a coefficient of elasticity E in at least
3 one of the plies, measured in the non-bonding zones of the ply in the direction parallel to the flute,
4 as an average over the non-bonding zones is no less than 700 MPa.

130.(canceled)

131.(canceled)

1 132.(previously presented) The laminate according to claim 100, wherein both the ply A and the
2 ply B are supplied with a multitude of perforations, whereby the perforations do not reach into the
3 spot bonds, and the perforations in the ply A are displaced from the perforations in the ply B so as
4 to cause gas or liquid when passing through the laminate, to run a distance through the flutes
5 substantially parallel to the main surfaces of the laminate; channels formed by the flutes may be
6 closed to form pockets.

133.(canceled)

1 134.(currently amended) The laminate according to claim ~~100~~¹³³, wherein by choice of
2 hydrophobic properties of at least the inner surfaces of the channels or pockets formed by the flutes
3 and by selected small spacing of said channels or pockets, and choice of the distances between the
4 mutually displaced perforations in the ply A and the ply B, there is achieved a desirable balance
5 between the pressure needed to allow water through the laminate and the laminate's capability to
6 allow air and vapour to pass therethrough.

1 135.(previously presented) The laminate according to claim 132, further comprising fibre film
2 portions of the fibrous web protruding from borders of the perforations of at least one surface of
3 the laminate.

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1 199.(previously presented) The laminate according to claim 102, wherein the flute wavelength
2 in each of the two plies is no more than 3 mm.

1 200.(previously presented) The laminate according to claim 102, wherein the flute wavelength
2 in each of the two plies is no more than 2 mm.

1 201.(previously presented) The laminate according to claim 103, wherein each of the two plies
2 the curved length of a flute is on average at least 10% longer than the linear wavelength.

1 202.(previously presented) The laminate according to claim 105, wherein the width of each
2 bonding zone in at least one of the two plies is no less than 20% of the flute wavelength.

1 203.(previously presented) The laminate according to claim 105, wherein the width of each
2 bonding zone in at least one of the two plies is no less than 30% of the flute wavelength.

1 204.(currently amended) The laminate according to claim 114, wherein the yield tension in the
2 ply A in a direction parallel to its flute direction and/or the yield tension in the ply B in a direction
3 parallel to its flute direction, both referring to the cross-section of the respective ply and determined
4 in non-bonded narrow strips at an extension velocity of 500%min⁻¹, is no less than 50 MPa and still
5 more preferably no less than 75 MPa.

1 205.(previously presented) The laminate according to claim 114, wherein the yield tension in the
2 ply A in a direction parallel to its flute direction and/or the yield tension in the ply B in a direction
3 parallel to its flute direction, both referring to the cross-section of the respective ply and determined
4 in non-bonded narrow strips at an extension velocity of 500%min¹, is no less than 75 MPa.

1 206.(previously presented) The laminate according to claim 116, wherein the ply B comprises a
2 thermoplastic elastomer.

1 207.(previously presented) The laminate according to claim 120, wherein the total width of the
2 extensions leaves no less than 70% of the width of the non-bonding zone as not belonging to any
3 first attenuated zone.

1 208.(previously presented) The laminate according to claim 122, wherein the first attenuated
2 zones of the ply are attenuated so that the minimum thickness in such zone is less than 50% of that
3 maximum thickness.

1 209.(previously presented) The laminate according to claim 122, wherein the first attenuated
2 zones of the ply are attenuated so that the minimum thickness in such zone is less than 30% of that
3 maximum thickness.

1 210.(previously presented) The laminate according to claim 123, wherein the ply A and the ply
2 B comprise a polyolefin.

1 211.(currently amended) The laminate according of claim 129, wherein the the average over the
2 non-bonding zone is no less than 1000 MPa.

212.(canceled)

1 213.(currently amended) The laminate according to claim ~~134~~214, wherein the laminate further
2 includes micro-perforations established in the flutes, which enhance the effect of the preservative.

1 214.(new) The laminate according to claim 100, wherein at least some of the channels formed
2 by the flutes in the ply A and the ply B, which channels may be closed to pockets, contain a filling
3 material in particulate, fibrous, filament or liquid form.

1 215.(new) The laminate according to claim 214, wherein the material is a preservative for goods
2 intended to become packed in or protected by the laminate, a corrosion inhibitor or a fire
3 extinguishing agent.

1 216.(new) The laminate according to claim 132, wherein the channels or pockets contain filling
2 material adapted to act as a filter material by holding back suspended particles from a fluid passing
3 through the channels or pockets or is an absorbent or ion-exchanger capable of absorbing or
4 ion-exchanging matter dissolved in such fluid, the filler optionally being fibre-formed or
5 yarn-formed.

1 217.(new) The laminate according to claim 134, used as a sanitary backsheet, on a diaper or as
2 a sheet for covering a patient during surgery.

1 218.(new) The laminate according to claim 134, used for insulation of buildings.

1 219.(new) The laminate according to claim 132, used as a geotextile which allows water to pass
2 but holds fine particles back.

1 220.(new) A bag made from the laminate according to any of the claims 100, wherein the flutes
2 on one of the two major surfaces of the bag are substantially perpendicular to the flutes on the other
3 major surface of the bag.

1 221.(new) The laminate according to claim 215, wherein the preservative is selected from the
2 group consisting of an oxygen scavenger, ethylene scavenger, and a biocide.